

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte EDWARD J. BORTOLINI, CHIA CHANG LI
and ROGER W. LOOTS

Appeal 2008-4048
Application 09/766,736
Technology Center 2400

Decided: November 20, 2008

Before KENNETH W. HAIRSTON, JOHN A. JEFFERY, and
CARL WHITEHEAD, JR., *Administrative Patent Judges*.

WHITEHEAD, JR., *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 6, and 11 to 24. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

A. INVENTION

The Appellants invented a distributed broadband cable modem termination system that separates the upstream and downstream functions of the system to operate independently of each other.¹

B. ILLUSTRATIVE CLAIMS

Claims 1 and 15, which further illustrate the invention, follow:

1. A broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a plurality of end user locations that are connected to a first side of said network and a head-end via a cable modem that is connected on a second side of said network, said broadband network comprising a hierarchical network having at least two levels, said broadband cable modem termination system comprising:

downstream broadband cable modem component means, located at a first level of said hierarchical network, which is proximate to said second side of said network, comprising:

means for exclusively converting data that is received in digital base-band IP format from a source of program material located at said head-end, to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations,

means for transmitting said data in said radio frequency based format exclusively through said network to selected ones of said plurality of end user locations;

upstream broadband cable modem component means, located at a second level of said hierarchical network which is proximate to said first side of said network and independent of said downstream broadband cable modem component means, comprising:

¹ See generally Spec. 1:4-7 and 2:10-12

means for exclusively converting data that is received in a radio frequency based format from selected ones of said plurality of end user locations, to data in digital base-band IP format for transmission to said head-end,

means for transmitting said data in digital base-band IP format exclusively through said network to said head-end; and

wherein said first level and said second level are different levels in said hierarchical network and said means for exclusively converting data from digital base-band IP format to data in a radio frequency based format is at a different location from said means for exclusively converting data from a radio frequency based format to data in digital base-band IP format.

15. A method for managing data transmissions through a broadband network that interconnects a head-end that is connected to a plurality of primary hubs of said broadband network, and a plurality of end user locations that are connected to a plurality of secondary hubs of said broadband network, said broadband network interconnecting said primary and said secondary hubs, said broadband cable modem termination system comprising:

operating a primary hub broadband cable modem component that is connected to at least one of said primary hubs, comprising:

exclusively converting data that is received in digital base-band IP format from a source of program material located at said head-end to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations;

transmitting said data in said radio frequency based format exclusively through said broadband network to selected ones of said plurality of end user locations;

operating a secondary hub broadband cable modem component that is connected to at least one of said secondary hubs and independent of said primary hub broadband cable modem component, comprising:

exclusively converting data that is received in a radio frequency based format from selected ones of said plurality of end user locations to data in digital base-band IP format for transmission to said head-end;

transmitting said data in digital base-band IP format exclusively through said network to said head-end; and

wherein said primary hubs and said secondary hubs are located at different levels in said broadband network, and said step of exclusively converting data from digital base-band IP format to data in a radio frequency based format occurs at a different location from said step of exclusively converting data from a radio frequency based format to data in digital base-band IP format.

C. REJECTIONS

The Examiner relies upon the following as evidence in support of the rejection:

Appellants' admitted prior art disclosed in Figures 1, 2 and pages 1 to 5 of original disclosure.

1. Claims 6 and 21 to 24 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to distinctly claim the subject matter which Appellants regard as the invention.

2. Claims 1, 6, and 11 to 24 stand rejected under 35 U.S.C. § 102(b) as anticipated by Appellants' admitted prior art (see Figure 2).

ISSUES

The issues are: (1) whether claims 6 and 21 to 24 are indefinite for failing to distinctly claim the subject matter of the invention and (2) whether the Appellants' admitted prior art discloses a structure having dedicated cable modem termination systems exclusively converting data received in both digital base-band IP format and radio frequency based format.

FINDINGS OF FACT

1. The Appellants chose not to address the validity of the Examiner's 35 U.S.C. § 112, second paragraph, rejection of claims 6 and 21 to 24 (App. Br. 11).

2. The Appellants' admitted prior art (Figure 2) discloses a broadband cable networking structure having cable modem termination systems (CMTS; 107 and 108) positioned in the passive fiber nodes. The CMTS are employed for both upstream signals and downstream signals (Figure 2, Spec. 4 and 5) and connected to the regional backbone network (100) via primary hubs (121-125) and secondary hubs (131-137).

Appellants' admitted prior art Figure 2

FIG. 2
PRIOR ART

The diagram illustrates a network architecture labeled "FIG. 2 PRIOR ART". It shows a hierarchical network structure. On the left, a "REGIONAL BACKBONE NETWORK" is connected to three "MASTER HEADEND" nodes (111, 112, 113). Node 111 is connected to an "IP BACKBONE" (101) and a "PSTN" (102). The Master Headends are connected to a central "PRIMARY HUB" (124). The Primary Hub is connected to several "SECONDARY HUB" nodes (131, 132, 133, 134, 135, 136, 137). These Secondary Hubs are connected to "PASSIVE FIBER NODES" (141-149). The Passive Fiber Nodes are connected to "DIGITAL BASE-BAND IP DATA" and "DOCSIS IP DATA" networks. The DOCSIS IP DATA network is shown as a series of "CMTS" (Cable Modem Termination Systems) and "CMTS LOCATIONS" (107, 108) connected to "PASSIVE FIBER NODES".

1	:	11	2	1	1	11	11	1	1:55	11
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5. Claim 11 states:

wherein said primary hubs and said secondary hubs are located at different levels in said broadband network, and said means for exclusively converting data from digital base-band IP format to data in a radio frequency based format is at a different location from said means for exclusively converting data from a radio frequency based format to data in digital base-band IP format.

6. Claim 15 discloses the step of:

wherein said primary hubs and said secondary hubs are located at different levels in said broadband network, and said step of exclusively converting data from digital base-band IP format to data in a radio frequency based format occurs at a different location from said step of exclusively converting data from a radio frequency based format to data in digital base-band IP format.

PRINCIPLES OF LAW

"Claims must be read in view of the specification, of which they are a part." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc).

"[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989)).

"[A]nticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim" *In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) (citing *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1457 (Fed. Cir. 1984)). "[A]bsence from the reference of any claimed element negates anticipation." *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 1571 (Fed. Cir. 1986).

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007).

It is an obvious expedient to the skilled artisan to integrate into a single unit individual devices that were known in the art to be separate but operating together. *In re Larson*, 340 F.2d 965, 968 (CCPA 1965).

ANALYSIS

The Examiner indicated claims 6 and 21 to 24 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to distinctly claim the subject matter which Appellants regard as the invention because the "said primary hubs" and "said secondary hubs" limitations in claim 6 have insufficient antecedent basis in the claim (Ans. 3). Appellants present no substantive argument regarding this rejection and instead state that the rejection "represents a minor correction and can be addressed in an Amendment once this Appeal is decided." (App. Br. 11).

In absence of any argument that the Examiner's rejection is erroneous, we affirm the Examiner's 35 U.S.C. § 112, second paragraph, rejection of claims 6 and 21 to 24.

As indicated *supra* in Findings of Fact 3 through 6, claims 1, 6, 11 and 15 all disclose claim limitations indicating exclusive structures (CMTS) for converting data from the digital base-band IP format to data in a radio frequency format (downstream) that are separate from the structures that exclusively convert data from a radio frequency based format to data in digital base-band IP format (upstream). The arrangement of the exclusive CMTS structures allows the downstream signals and the upstream signals to flow unencumbered by the other (App. Br. 4-5).

The Examiner rejected claims 1, 6 and 11 to 24 under 35 U.S.C. § 102(b) indicating that in the Appellants' admitted prior art, the CMTS structures (Figure 2, 107 and 108) are used for exclusive upstream means as well as exclusive downstream means (Ans. 4-5). The Examiner's assessment of the functionality of the CMTS structures disclosed by the Appellants' admitted prior art conflicts with the description provided by the Appellants (Spec. 4-5). The Appellants indicated that the disclosed prior art CMTS (Figure 2, 107 and 108) function as both upstream and downstream structures (FF. 2). The arbitrary selection by the Examiner of one of the CMTS (108) to function as the upstream structure and the other CMTS (107) to function as the downstream structure does not meet the burden necessary for an anticipatory rejection because the specification is silent as to any exclusivity of the CMTS employed in the prior art, and, therefore, every element of the claim has not been disclosed by the admitted prior art.

For the foregoing reasons, we cannot sustain the Examiner's rejection of claims 1, 6 and 11 to 24 under 35 U.S.C. § 102(b).

New Ground of Rejection Under 37 C.F.R. § 41.50 (b)

Under 37 C.F.R. § 41.50 (b), we enter a new grounds of rejection under 35 U.S.C. § 103 (a) for claims 1, 6 and 11 to 24.

Claims 1, 6 and 11 to 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Appellants' admitted prior art. As indicated in the Findings of Fact 3 to 6, the point of contention for the independent claims 1, 6, 11 and 15 is the exclusiveness of the CMTS units to process upstream signals at a separate location than the CMTS units that process downstream signals. The Appellants' disclosed prior art figure 2 discloses the claimed invention with the exception of the exclusiveness of the CMTS to process signals independently (FF. 2). However, to separate the functions of the CMTS units of the disclosed prior art into two separate and distinct units would have been obvious to one of ordinary skill in the art. It is an obvious expedient to the skilled artisan to integrate into single unit individual devices that were known in the art to be separate but operating together. *In re Larson*, 340 F.2d at 968. Further, the separation of the functions of the integrated CMTS units would only yield predictable results. An artisan would expect for the signal flow to improve if one separates the integrated CMTS units into dedicated CMTS units because of the elimination of signal congestion. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. at 1739.

DECISION

We have sustained the Examiner's rejections with respect to claims 6 and 21 to 24 under 35 U.S.C. § 112, second paragraph. We, however, have not sustained the Examiner's rejection with respect to claims 1, 6 and 11 to 24 under 35 U.S.C. § 102(b). The decision of the Examiner rejecting claims 1, 6 and 11 to 24 is affirmed-in-part. We have also entered a new ground of rejection under 37 C.F.R. § 41.50(b) for claims 1, 6 and 11 to 24.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides that "[a] new ground of rejection..., shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner

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(2) *Request rehearing.* Request that
the proceeding be reheard under §
41.52 by the Board upon the same
record

No time period for taking any subsequent action in connection with
this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART
37 C.F.R. § 41.50(b)

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